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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,466	07/11/2003	Teresa Bellinger	200309526-1	5319

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

DO, AN H

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/618,466

Applicant(s)

BELLINGER ET AL.

Examiner

An H. Do

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 14-19 and 30-34 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1, 3, 4, 6 and 7 is/are allowed.  
6) ☒ Claim(s) 2, 5, 14-19 and 30-34 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The Amendment filed on 02 June 2005 has been acknowledged.

#### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 14, 15 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ouchida et al (US 5,936,650).

Regarding claim 14, a system (10) comprising: a print cartridge (120 having a port (inlet fitment 44) the print cartridge (12) including first (transport valve 86) and second (check valve 64) valves in fluid communication with the port (44); an ink supply (20) external to the print cartridge 12); a pump (26) external to the print cartridge (12) and in fluid communication with the port (44) and the ink supply (20); a controller configured to maintain the second valve (64) closed and to open the first valve (86) to permit ink delivery from the ink supply to the print cartridge (12) via the first valve (86) during a filling operation; and the controller further configured to maintain the first valve (86) closed and to open the second valve (64) to permit the pump to pull air from the print cartridge via the second valve during a cooling operation (column 4, lines 29-37).

Regarding claim 15, wherein the print cartridge (12) further comprises: a first chamber (ink storage volume 14) in fluid communication with the first valve (86); a second chamber (standpipe volume 16) in fluid communication with the second valve (64); and a printhead (18) disposed outside of the first (14) and second (16) chambers.

Regarding claim 19, a system (10) for controlling the temperature of a printhead (18) mounted on a print cartridge 12) including first (14) and second (16) chambers in fluid communication with a port (inlet fitment 44) via first (transport valve 86) and second (check valve 64) valves, respectively, the system (10) comprising: means for pumping air from the second (16) chamber via the second valve (check valve 64) to draw ink disposed within the first chamber (14) across the printhead (18) and into the second

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chamber (16) while maintaining the first valve closed (86); and means for pumping (pump 26) ink into the first chamber (14) via the first valve (transport valve 86) while maintaining the second valve closed (Figure 1).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchida et al (US 5,936,650) in view of Hou et al (US 6,213,598).

Ouchida et al disclose in Figures 1 and 2 the following claimed features:

-a print cartridge (12), comprising: a port (inlet fitment 44); a first valve (transport valve 86) and a second valve (check valve 64) in fluid communication with the port (inlet fitment 44), the first (transport valve 86) and second (check valve 64) valves being configured to selectively operate in open and closed positions (Figure 1); a first chamber (ink chamber 14) in fluid communication with the first valve (transport valve 86); a second chamber (standpipe volume 16) in fluid communication with the second valve (check valve 64); a printhead (printhead 18) disposed outside the first (14) and second (16) chambers, the printhead (18) being in fluid communication with the first (14) and second (16) chambers to permit ink within the first chamber (14) to pass across the printhead (18) as fluid is withdrawn from the second chamber (Figure 1 shows the arrow flows of the fluid withdrawn from the standpipe volume 16).

Ouchida et al disclose the claimed invention except for reciting a bag disposed in the first chamber; and a bias member disposed in the first chamber, the bias member coupled to the bag to impart a compressing bias on the bag.

Hou et al teach in Figure 3A a bag (416) disposed in the first chamber (reservoir formed by sidewalls 400a, 400b, 400c and cap 405); and a bias member (spring 414) disposed in the first chamber, the bias member (spring 414) coupled to the bag (416) to impart a compressing bias on the bag.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a bag and a bias member, as taught by Hou et al into Ouchida et al, for the purpose of controlling the pressure within the ink reservoir (Column 1, lines 12-15).

6. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchida et al (US 5,936,650) in view of Haan et al (US 6,712,461).

Ouchida et al disclose in Figures 1 and 2 the following claimed features:

-a print cartridge (12), comprising: a port (inlet fitment 44); a first valve (transport valve 86) and a second valve (check valve 64) in fluid communication with the port (inlet fitment 44), the first (transport valve 86) and second (check valve 64) valves being configured to selectively operate in open and closed positions (Figure 1); a first chamber (ink chamber 14) in fluid communication with the first valve (transport valve 86); a second chamber (standpipe volume 16) in fluid communication with the second valve (check valve 64); a printhead (printhead 18) disposed outside the first (14) and second (16) chambers, the printhead (18) being in fluid communication with the first (14)

and second (16) chambers to permit ink within the first chamber (14) to pass across the printhead (18) as fluid is withdrawn from the second chamber (Figure 1 shows the arrow flows of the fluid withdrawn from the standpipe volume 16).

Ouchida et al disclose the claimed invention except for reciting a heating element disposed within the chamber.

Haan et al teach in Figure 1 a heating element (22) disposed within the chamber (reservoir 20) for heating the ink.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a heating element disposed within the chamber, as taught by Haan et al into Ouchida et al, for the purpose of heating the ink.

7. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchida et al (US 5,936,650) in view of Moriyama et al (US 6,050,680).

Ouchida et al disclose the claimed invention except for reciting the following claimed features:

Regarding claim 17, further comprising: a motor; and a clutch mechanism coupled to the motor and to the pump to transfer rotational power from the motor to the pump based, the clutch being controlled by the controller.

Regarding claim 18, further comprising: a motor; a print media handling mechanism; and a clutch mechanism coupled to the motor, the print media handling mechanism, and to the pump to selectively transfer rotational power from the motor to either the pump or the print media handling mechanism based on control signals received from the controller.

Moriyama et al teach in Figure 3 the following:

Regarding claim 17, further comprising: a motor (pump motor 18); and a clutch mechanism coupled to the motor and to the pump to transfer rotational power from the motor to the pump based, the clutch being controlled by the controller (column 4, lines 22-32).

Regarding claim 18, further comprising: a motor (pump motor 18); a print media handling mechanism and a clutch mechanism coupled to the motor, the print media handling mechanism, and to the pump to selectively transfer rotational power from the motor to either the pump or the print media handling mechanism based on control signals received from the controller (column 4, lines 22-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a motor and clutch mechanism, as taught by Moriyama et al into Ouchida et al, for the purpose of activating and controlling the pump.

8. Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchida et al (US 5,936,650) in view of Haan et al (US 6,712,461) and Schiaffino et al (US 6,390,585).

Ouchida et al disclose in Figures 1 and 2 the following claimed features:

Regarding claim 30, a print cartridge (12) comprising: a chamber (ink chamber volume 14) having ink disposed therein; and a printhead (18) in fluid communication with the chamber (14) for ejecting ink.

Regarding claim 32, further comprising: a port (inlet fitment 44); and a first valve (transport valve 86) disposed between the chamber (14) and the port (44) to regulate



fluid flow between the first chamber (14) and the port (44).

Regarding claim 33, further comprising: a snorkel (standpipe volume 16); and a second valve (check valve 64) disposed between the snorkel (16) and the port (44) to regulate fluid flow between the snorkel (16) and the port (44).

Ouchida et al disclose the claimed invention except for reciting the following claimed features:

Further regarding claim 30, a first temperature sensor disposed within the chamber for determining a temperature of the ink disposed therein; and a second temperature sensor disposed at the printhead for determine a temperature of the printhead.

Regarding claim 31, a heating element disposed within the chamber to heat the ink in the chamber.

Haan et al teach in Figure 1 the following:

Further regarding claim 30, a temperature sensor (24) disposed within the chamber (reservoir 20) for determining a temperature of the ink disposed therein.

Regarding claim 31, a heating element (22) disposed within the chamber (reservoir 20) to heat the ink in the chamber.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a heating element and a temperature sensor disposed within the chamber, as taught by Haan et al into Ouchida et al, for the purpose of heating the ink and detecting the temperature of the ink respectively.

Schiaffino et al teach in Figure 6 the following:

Further regarding claim 30, a temperature sensor (48) disposed at the printhead for determine a temperature of the printhead (column 8, lines 13-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a temperature sensor disposed at the printhead, as taught by Schiaffino et al into Ouchida et al and Haan et al, for the purpose of determine a temperature of the printhead (column 8, lines 13-17).

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchida et al (US 5,936,650) in view of Haan et al (US 6,712,461) and Schiaffino et al (US 6,390,585), and further in view of Hou et al (US 6,213,598).

Ouchida et al as modified by Haan et al and Schiaffino et al disclose the claimed invention except for reciting a bag disposed in the chamber.

Hou et al teach in Figure 3A a bag (416) disposed in the chamber (reservoir formed by sidewalls 400a, 400b, 400c and cap 405).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a bag disposed in the chamber, as taught by Hou et al into Ouchida et al as modified by Haan et al and Schiaffino et al, for the purpose of controlling the pressure within the ink reservoir (Column 1, lines 12-15).

***Allowable Subject Matter***

10. Claims 1, 3, 4, 6 and 7 are allowed over prior arts for the reason as discussed in applicant's Remarks filed on 02 June 2005.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barinaga et al (US 6,478,415) disclose an ink cartridge having

two chambers separated by a filter and two fluidic interconnects corresponding to the two chambers.

***Response to Arguments***

12. Applicant's arguments filed 02 June 2005 have been fully considered but they are not persuasive. Applicant argued that Ouchida et al did not disclose a controller configured to open the second valve to pull air out of print cartridge. This is not found persuasive for the reason that Ouchida et al disclose in Figure 1 a system for pulling air from the print cartridge via a second valve (64). Applicant further argued that the combination of Ouchida et al in view of Hou et al did not teach the bag and a bias member. This argument is not found persuasive either since the use of the bag and bias member so as to compress the bag for supplying the ink as found in the teaching of Hou. Applicant also argued that Haan et al did not teach the heating element disposed within the chamber. This is not found persuasive because the use of heating element as taught by Haan et al is for heating the ink within the chamber as mentioned in the above rejection.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AD  
August 8, 2005



8/8/05  
**MANISH S. SHAH**  
**PRIMARY EXAMINER**